Advanced Inorganic Chemistry  
CHE 5331-002 Chemistry,  
Hybrid mode: online + zoom  
Fall 2020

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Office: M-117  
Office Hours: M&W: 9 – 10:30 am  
T&R: 1 – 2pm  
F: 9 – 10am, other times by appointment

Prerequisites:
CHE 331/CHE 332 (Organic Chemistry I & II); CHE 337/CHE 338 (Physical Chemistry I&II)

Suggested Textbooks:


Inorganic Chemistry by Gary Miessler, Paul Fischer, and Donald Tarr, 5th Edition;

Course Description:

This course is for 3 credits and typically meets for 280 minutes a week for 8 weeks plus meets for a 2-hour final examination. Students have significant weekly reading and homework assignments involving critical thinking and quantitative reasoning. Students are tested over the material via quizzes and several exams during the semester including a comprehensive final exam. These activities average at a minimum 6 hours of work each week to prepare outside of classroom hours.

This course covers the chemistry of all of the chemical elements and their compounds, including interpretative discussion in the light of the latest advances in structural chemistry, general valence theory, and particularly, ligand field theory. Bear in mind that the periodic table is the main tool of the inorganic chemist.

Course Goals:

- Understand basic inorganic bonding theory.
- Applications of symmetry and group theory to bonding and spectroscopy.
- Explain the position of elements in the Periodic Table and the relation of the elements’ physical and chemical properties based on electronic structure.
• Be familiar with transition metals, their coordination complexes and a few applications to bioinorganic and catalytic chemistry.

Grading Policies:

The final course grade will be based on points earned from exams, quizzes, homework assignments, and class participation. The points will be weighted as follows:

Exams (2) – 200
Quizzes (4) – 100
Homework – 100
Participation – 100

Late Work – Late homework assignments will be accepted; however, you penalize yourself 10% of the total per day that the assignment is late up to 50% off. If you need special accommodations or brief deadline extensions, please contact me before the activity is due.

Make-up Work – There will not be make-ups offered for homework and exams. The lowest quiz grade will be dropped.

Grading Scale:

A: ≥ 450; B: ≥ 400; C: ≥ 350; D: ≥ 300; F: < 300

Technical Support

If at any point during the course you experience technical difficulties in Brightspace, please let me know immediately. You are also encouraged to contact Andra Floyd, head of our Brightspace support team, by email (afloyd@sfasu.edu) or phone (936-468-1919) for technical help. Andra is an expert at helping students solve technical difficulties in Brightspace.

Deadlines Policy

In this course you are part of an active community of learners, and as such, meeting the due dates and deadlines is extremely important. You are expected to keep an eye on the Course Timeline and to complete work on time.

If you need a brief extension on any due date, please contact me at least a couple of days ahead of time so that we can make alternate arrangements.

Attendance Policy

This course is online (80%) + zoom(20%). There are no required face-to-face meetings for the course. Participants are expected to log in regularly, multiple times per week, and to keep up
with the course news, email, and deadlines. Several online Zoom sessions (web conference-style meeting) will be scheduled, and attendance is mandatory.

**Email Policy**

I will check and respond to course-related Brightspace email during the regular work week (Monday -Friday), during the regular work day (9 - 5). So, if you send me an email on a Friday night, for example, it may be Monday morning before I respond. Course participants are also expected to check and respond to their course-related Brightspace email and news regularly, Monday through Friday.

**Academic Integrity (A-9.1):**

Academic integrity is a responsibility of all university faculty and students. Faculty members promote academic integrity in multiple ways including instruction on the components of academic honesty, as well as abiding by university policy on penalties for cheating and plagiarism. Definition of Academic Dishonesty: Academic dishonesty includes both cheating and plagiarism. Cheating includes but is not limited to (1) using or attempting to use unauthorized materials to aid in achieving a better grade on a component of a class; (2) the falsification or invention of any information, including citations, on an assigned exercise; and/or (3) helping or attempting to help another in an act of cheating or plagiarism. Plagiarism is presenting the words or ideas of another person as if they were your own. Examples of plagiarism are (1) submitting an assignment as if it were one's own work when, in fact, it is at least partly the work of another; (2) submitting a work that has been purchased or otherwise obtained from an Internet source or another source; and (3) incorporating the words or ideas of an author into one's paper without giving the author due credit.

Please read the complete policy at [http://www.sfasu.edu/policies/academic_integrity.asp](http://www.sfasu.edu/policies/academic_integrity.asp)

Any student found cheating will be subject to the penalties as stated in the Student Code of Conduct handbook; including but not limited to a score of zero on exam, expulsion from the class or expulsion from the University.

**Students with Disabilities:**

To obtain disability related accommodations, alternate formats and/or auxiliary aids, students with disabilities must contact the Office of Disability Services (ODS), Human Services Building, and Room 325, 468-3004 / 468-1004 (TDD) as early as possible in the semester. Once verified, ODS will notify the course instructor and outline the accommodation and/or auxiliary aids to be provided. Failure to request services in a timely manner may delay your accommodations. For additional information, go to [http://www.sfasu.edu/disabilityservices/](http://www.sfasu.edu/disabilityservices/).
# CHE 5331-002 Timeline

## Fall 2020

Dates may change at the discretion of the instructor. Should a date change be required, it will be announced in the course news or on the discussion board. All times listed are Central Standard Time.

<table>
<thead>
<tr>
<th>Week &amp; Unit</th>
<th>Date</th>
<th>Activity</th>
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| Week 1: Unit 1 Getting Started and Unit 2 Review of Atomic Orbital and Molecular Orbital | 10/15-10/18 | Course opens. Aim to complete Unit 1 and Unit 2 within the first couple of days.  
**Note:** 1. Read unit contents  
2. complete “Introduce Yourself” discussion.  
3. complete quiz 1  
*Due 11:59 pm on 10/18* |
| Week 2: Unit 3 Symmetry and Group Theory | 10/19-10/25 | Begin Unit 3  
**Note:** 1. Read unit contents  
2. Complete quiz 2  
3. Submit assigned homework 1  
*Due 11:59 pm on 10/25* |
| Week 3: Unit 4 Group Orbitals (molecular orbitals for large molecules) | 10/26-11/01 | Begin Unit 4  
**Note:** 1. Read unit contents  
2. Submit assigned homework 2  
*Due 11:59 pm on 11/06* |
| Week 4: Unit 5 Coordination Chemistry I: Structures and Isomers | 11/02-11/08 | Begin Unit 5  
**Note:** 1. Read unit contents  
2. Complete quiz 3  
3. Submit assigned homework 3  
*Due 11:59 pm on 11/08* |
<p>| <strong>Exam 1</strong> | 11/09 | TBA |
| | 11/09-11/15 | Begin Unit 6 |</p>
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<tr>
<th>Week 5: Unit 6 Coordination Chemistry II: Bonding and Electronic Spectra</th>
<th>Note: 1. Read unit contents 2. Complete quiz 4 Due 11:59 pm on 11/15</th>
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<tr>
<td>Week 6: Unit 7 Inorganic Chemistry Research</td>
<td>11/16-11/20 Begin Unit 7</td>
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<td>Week 7: Thanksgiving Holiday</td>
<td>11/21-11/29 No Activity</td>
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<tr>
<td>Week 8: Unit 8 Inorganic Chemistry Research and Review</td>
<td>11/30- 12/04 Begin Unit 8</td>
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<td>Final Exam</td>
<td>12/07 TBA</td>
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